

Application Number 10/696,491
Amendment responsive to Office Action mailed January 30, 2008

REMARKS

This Amendment is responsive to the Office Action dated January 30, 2008. Applicant has amended claims 1, 4, 13, 14, 17, 26, 29, 38, 39, 41, 42, 50, 53, 60, 61 and 63. Applicant has cancelled claims 12, 37 and 59. Applicant had previously cancelled claims 8, 20, 33, 45, 47, 57, 66, 69, and 72-123. Claims 1-7, 9-11, 13-19, 21-32, 34-36, 38-44, 46, 48-56, 58, 60-65, 67, 68, and 70-71 are pending.

Claim Rejection Under 35 U.S.C. § 103

The Office Action rejected claims 1-7, 9-19, 21-32, 34-44, 46, 48-56, 58-65, 67-68, 70-71 under 35 U.S.C. 103(a) as being unpatentable over Hernandez (US 6,654,072) in view of North ("Patient-Interactive, Microprocessor-Controlled Neurological Stimulation System," by North et al.). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no rational reason for modification to arrive at the claimed invention.

As an initial matter, Applicant respectfully disagrees with the conclusion that it would have been obvious to modify Hernandez to display an external surface of a human body based on the teachings of Hernandez and North. The Office Action stated that such a modification would have been obvious because "Hernandez" [sic] object can be a complex object represented by a mesh of polygons such as a human object." However, contrary to this statement in the Office Action, Hernandez does not mention human objects or a mesh of polygons.

In support of the above statement, the Office Action cited a broad statement in Hernandez that the method "can be applied to any object in any configuration capable of being defined by a CAD/CAM/CAE system, or any system used to display views of an object from varying viewpoints." Thus, the Office Action appears to have merely argued that a human body falls within the scope of Hernandez's statement that the method can be applied to "any object" and, therefore, application of Hernandez's method to the human body would have been obvious. That Hernandez's method could be applied to a human body, a point which Applicant does not concede, is insufficient for a prima facie case of obviousness. Instead, there must be some rational reason, evident in the prior art, that a person of ordinary skill in the art at the time of

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Applicant's invention would have for undertaking such a modification of Hernandez. Mere combinability of the references is not sufficient. The Office Action has not cited any rational reason, sufficient for a *prima facie* case of obviousness, that a person of ordinary skill in the art would have modified Hernandez to display a human body.

Notwithstanding Hernandez's broad statement, Hernandez is directed to the problem of suppliers (e.g., manufacturers) having difficulty keeping track of various edges, faces and features of an object when displayed in various views of a complex CAD/CAM/CAE drawing, and thus having difficulty manufacturing a part based on such drawings¹. Hernandez does not suggest that such problems are present when viewing the human body and, in any event, there is no need to keep track of edges, faces and features for purposes of manufacturing a human body. Furthermore, North does not suggest that there are any problems with viewing the human body that would be remedied by use of techniques such as those taught in Hernandez. In fact, North specifically relies on a two-view representation of the human body which was a long used standard in North's art area.² In fact, the only evidence in the record of a problem with displaying the human body in the manner taught by North is Applicant's recognition of such problems in Applicant's disclosure. Applicant respectfully suggests that hindsight is being used to modify Hernandez based on Applicant's disclosure, rather than any teaching in Hernandez, North, or elsewhere in the prior art. For at least these reasons, the rejections of Applicant's claims as obvious based on Hernandez in view of North should be withdrawn.

Furthermore, in the interest of advancing the prosecution of the application, Applicant has amended independent claims 1, 26, and 50 to further clarify the invention and expedite allowance. Particularly, Applicant has incorporated by amendment limitations similar to claims 12, 37 and 59 into independent claims 1, 26 and 50, respectively. Applicant has cancelled claims 12, 37 and 59. By making the amendment Applicant does not acquiesce to the Office Action's arguments or characterization of the prior art.

Claims 1, 26, and 50

As amended, independent claim 1 now recites, a method comprising, *inter alia*, mapping the input to a body surface coordinate system that describes a plurality of points on the external

¹ Hernandez, col. 1, l. 62 – col. 2, l. 9.

² North, p. 187 (“50-year-old Palmer pain drawing”).

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surface of the human body, regenerating the body template to illustrate the indicated region on the template based on the body surface coordinate system with the mapped input, and displaying the regenerated body template. Independent claims 26 and 50 have been similarly amended. Hernandez in view of North fails to teach or suggest each and every element of the amended independent claims.

In support of the rejection for claims 12, 37 and 59, which recited limitations similar to those added to the independent claim by this amendment and are now cancelled, the Office Action cited to Hernandez at col. 4, lines 10-50 as teaching a body surface coordinate system. Applicant respectfully submits that the cited section is unrelated to "mapping the input to a body surface coordinate system that describes the external surface of the human body," as previously recited by claims 12, 37 and 59, and is likewise unrelated to the requirements of amended independent claims 1, 26 and 50. Applicant is confused as to how the Examiner reasoned that Hernandez at col. 4, lines 10-50 teaches or suggests "mapping the input to a body surface coordinate system that describes the external surface of the human body." The Office Action failed to provide any reasoning for the rejection, and merely cited to Hernandez at col. 4, lines 10-50 as teaching this element of the claim³.

The cited portion of Hernandez does not disclose or suggest mapping the input to a body surface coordinate system that describes a plurality of points on the external surface of the human body, or regenerating the body template to illustrate the indicated region on the template based on body surface coordinate system with the mapped input, as required by the amended independent claims. Instead, the system of Hernandez, as described at col. 4, lines 10-50, allows a user to highlight an edge to distinguish it from the other edges⁴. The system of Hernandez, as described at col. 4, lines 10-50, further allows a user to highlight an edge without performing any additional tasks, e.g. click a button on the mouse⁵. The system of Hernandez, as described at col. 4, lines 10-50, highlights adjoining faces to further distinguish the highlighted edge⁶. Allowing users to highlight edges and highlighting adjoining faces, per Hernandez, does not teach or

³ Office Action, dated 1/30/08, page 5.

⁴ Hernandez, col. 4, lines 14-16.

⁵ Hernandez, col. 4, lines 24-27.

⁶ Hernandez, col. 4, lines 43-45.

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suggest that the input is mapped to a body surface coordinate system that describes a plurality of points on the external surface of the human body, as now required by claim 1.

Hernandez provides no teaching regarding coordinates, or a map that defines points of a surface with coordinates. In fact, contrary to the requirements of the amended independent claims, Hernandez teaches that reference is made to a database of faces and edges for an object in response to selection of an edge in order to determine which edges are highlighted in various views of the drawing.⁷ A database relating faces and edges is not the same as or suggestive of a body surface coordinate system that describes a plurality of points on the external surface of the human body, as required by the amended independent claims.

North fails to provide any additional teachings to overcome the deficiencies of Hernandez. The Office Action did not cite to North as teaching the requirements of now cancelled claims 12, 37 and 59.

For at least these reasons, the Office Action has failed to establish a prima facie case of obviousness of Applicant's claims based on Hernandez in view of North. For at least these reasons, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejections

Dependent Claims

The various dependent claims are allowable at least by virtue of their dependency upon allowable independent claims 1, 26, and 50. Furthermore, the various dependent claims recite limitations that are neither disclosed nor suggested by the applied references.

For example, contrary to the argument in the Office Action, the pointer arrow illustrated in Hernandez is not a direction arrow as recited in claims 6 and 31, or a rotation direction arrow as recited in claim 56. The pointer in Hernandez does not indicate a rotational direction or any direction. Instead, the pointer is used to point to a particular 2-D view, which causes the 3-D viewer to switch to the selected 2-D view. A user of the Hernandez system may control whether the object in the 3-D viewer moves and to what view the object moves using the pointer arrow, but Hernandez does not suggest that the user controls the direction of movement of the object.⁸ Further, the pointer in Hernandez does not indicate any direction of movement.

⁷ Hernandez, col. 6, ll. 1-34.

⁸ Hernandez, col. 4, ll. 6-10.

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As another example, the applied references fail to disclose or suggest an angle of rotation of the surface about the axis for a second body template being based on the proximity of the received body region indication to an edge of the first body template, as required by claims 10, 35 and 58. In rejecting these claims, the Office Action argued that the angles of rotation are inherent in Hernandez because the different projected views are available in memory. This argument is unclear.

If the different views are in memory, per the Office Action, this would seem to indicate that Hernandez is limited to fixed angles of rotation. Fixed angles of rotation are directly contrary to the requirements of these claims, wherein the rotation angle is based on proximity of the received body region indication to an edge of the first body template. In any event, there is no teaching in Hernandez remotely suggesting that an angle of rotation of the 3D view of the object is based on proximity of a received body region indication to an edge of a first body template. Hernandez teaches that the rotation of the 3D view of the object is based on which 2-D view the pointer is located over, but does not suggest that it is based on proximity of a received body region indication to an edge of one of the 2-D views, or an edge of the 3-D template.⁹

As further examples, the applied references fail to disclose or suggest the requirements of claims 13-19, 38-44 and 60-65. As discussed above, the portion of Hernandez cited in the Office Action does not in any way suggest a body surface coordinate system that defines a plurality points on the surface of the human body, as required by the amended independent claims. Hernandez, thus, also fails to disclose or suggest generating a plurality of body templates based on such a body surface coordinate system, as recited by claims 13, 38 and 60. Furthermore, Hernandez's teachings of 2-D and 3-D views are not the same as or suggestive of a three-dimensional or two-dimensional coordinate system, as recited by claims 14, 17, 39, 42, 61 and 63. Moreover, there is nothing in Hernandez that would have suggested a linear interpolation, a higher-order interpolation, or a spline technique, assigning a third coordinate to each point of the indicated region of the body template, mathematically peeling and flattening a representation of the external surface of the human body, and indicating continuity at edges of the body surface, or projecting a two-dimensional coordinate system onto a three-dimensional frame representation of the external surface of the human body, as variously recited in claims 15, 16, 18, 19, 40, 41, 43,

⁹ Hernandez, col. 4, ll. 6-10.

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44, 62, 64 and 65. These features are not design choices or otherwise made obvious by the mere mention of 2-D and 3-D views in Hernandez.

For at least these reasons, the Office Action has failed to establish a prima facie case of obviousness of Applicant's claims based on Hernandez in view of North. For at least these reasons, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejections

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

By:

April 30, 2008
SHUMAKER & SIEFFERT, P.A.
1625 Radio Drive, Suite 300
Woodbury, Minnesota 55125
Telephone: 651.735.1100
Facsimile: 651.735.1102

Jessica H. Kwak
Name: Jessica H. Kwak
Reg. No.: 58,975